



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

18. Proposed by B. F. FINKEL, A. M., Professor of Mathematics in Kidder Institute, Kidder, Missouri.

What is the average volume common to a cube and a rectangular solid one inch square, the axis of rectangular solid being equal to and coinciding with the diagonal of the cube?

Solutions to these problems should be received on or before September 1st.



MISCELLANEOUS.

Conducted by J. M. COLAW, Monterey, Va. All contributions to this department should be sent to him.

SOLUTIONS TO PROBLEMS.

8. Proposed by H. O. WHITAKER, B. S., M. E., Professor of Mathematics, Manual Training School, Philadelphia, Pennsylvania.

Find a general expression for the (integral) co-ordinates of a triangle with sides of integral lengths.

Solution by the PROPOSER.

My own method of solving this problem has been to take the three equations $y = \frac{a}{b}x$, $y = \frac{c}{d}x$, and $y = \frac{e}{f}x + g$, and eliminating x and y solve for g ; a and b , c and d , e and f being \pm sides of right triangles.

The sides I usually take for triangles have lengths (39, 34, 25), (13, 45, 40), (10, 39, 35). I am in the habit of giving a whole group of problems with the same triangle to be worked out consecutively; *e. g.*, Find, (1), length of each side; (2) equations of each side, (3), length each altitude; (4), sine each angle; (5), area; (6), equation of bisectors of each angle; (7), position of centers of inscribed and escribed circles; (8), their radii, and so on.

Another day I give something like this; A Δ has its vertices at (5, 10), (6, 4) and (3, 2), find, (1), the equations of the sides; (2), the equations of the altitudes; (3), the point of intersection of the altitudes; (4), the co-ordinates of the middle point of each side; (5), the equations of the medians; (6), the intersection of same; (7), the equations of perpendiculars through middle points of each side; (8), their intersection; (9), the equation of line through (3), (6) and (8).

9. Proposed by G. B. M. ZERR, A. M., Principal of High School, Staunton, Virginia.

Wires of five different metals A , B , C , D , E , having resistances a , b , c , d , e , have their ends soldered together at two junctions which are maintained at different constant temperatures. If the strength of current in E , when all five wires are continuous, is S , the strength of current when B , C , D , are cut is S_a , the strength of current when A , C , D , are cut is S_b , the strength of current when A , B , D , are cut is S_c , find the strength of current S_x , when A , B , C , are cut.